Self-compassion moderates the predictive effects of implicit cognitions on subjective well-being

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Abstract
This study examined whether self-compassion may regulate the effects of implicit cognitions (automatic and preconscious responses) on the subjective well-being of Australian adults (N = 132). As hypothesized, self-compassion moderated the predictive effects of 2 implicit cognitions (positive attention bias and implicit self-esteem) on 2 indicators of subjective well-being (life satisfaction and depressive symptoms). Low implicit self-esteem and weak positive attention bias predicted more depressive symptoms and lower life satisfaction only for participants who were low in self-compassion. These results extend previous research knowledge by indicating that self-compassion may not only buffer the impact of explicit (deliberate and conscious) cognitive processes on well-being but may also regulate the effects of preconscious cognitive processes on mental health outcomes. Theoretical and treatment implications are discussed.

KEYWORDS
attention bias, depression, dual process, implicit self-esteem, life satisfaction, self-compassion

1 | INTRODUCTION

Do unto ourselves as we would do unto others. This apparent reversal of the biblical golden rule is a cornerstone of self-compassion, which involves treating ourselves with care, acceptance, and kindness when we encounter difficult experiences—just as we typically treat others when they experience adversity (Gilbert, 2009a; Neff, 2003b). Self-compassion is a positive self-attitude that has been strongly associated with diverse aspects of positive psychological health (for reviews, see Barnard & Curry, 2011; MacBeth & Gumley, 2012; Zessin, Dickhäuser, & Garbade, 2015). A particularly robust and reliable association has been found between self-compassion and subjective well-being (MacBeth & Gumley, 2012; Zessin et al., 2015), which refers to an individual’s cognitive and affective evaluations of the quality of their life (Diener, Oishi, & Lucas, 2009). Specifically, highly self-compassionate individuals tend to report an abundance of positive experiences such as happiness, positive affect, and life satisfaction (Zessin et al., 2015) and few negative experiences such as negative affect, depression, and anxiety (MacBeth & Gumley, 2012; Zessin et al., 2015).

A growing literature indicates that self-compassion performs a self-regulatory function (Finlay-Jones, Rees, & Kane, 2015; Terry & Leary, 2011). For example, it has been found to facilitate emotion regulation and goal attainment (Krieger, Altenstein, Baettig, Doerrig, & Holtforth, 2013; Neff & Dahm, 2015; Raes, 2010) and to buffer the effects of low self-related evaluative cognitions on well-being (Marshall et al., 2015; Podina, Jucan, & David, 2015). To date, the self-regulatory ability of self-compassion has primarily been examined in relation to explicit (controlled and conscious) processes, which is in accord with its conceptualization as a process involving metacognitive activity in response to thoughts and feelings about difficult experiences (Neff, 2003a). Additionally, it has been associated with implicit (automatic and preconscious) processes, in the form of physiological indicators of nervous system reactivity (Arch et al., 2014; Breines et al., 2014; Breines et al., 2015). In this study, we examined whether self-compassion may also regulate the effects of implicit cognitions on two indicators of subjective well-being—life satisfaction and depressive symptoms.

1.1 | Implicit cognitions

According to dual-process theories, explicit and implicit cognitions are products of two distinct types of information processing: explicit processing, that is slow, effortful, conscious, and analytical; and implicit processing, that is fast, automatic, preconscious, and holistic (for review, see Evans, 2008). Consequently, as products of these processes, explicit cognitions take the form of conscious and deliberate evaluations (Evans, 2008), and implicit cognitions are defined as introspectively unidentified associations formed through life
experiences (Greenwald & Banaji, 1995; Koole, Dijksterhuis, & van Knippenberg, 2001). Implicit and explicit cognitions are believed to represent distinct constructs whose relationship varies across cognitive domains (Phillips & Hine, 2013).

Most contemporary dual-process theorists propose that implicit and explicit processes operate sequentially, whereby an initial implicit response may be endorsed, modified, or overridden by subsequent explicit processing (Evans, 2008). Beevers (2005) proposed that cognitive vulnerability to depression is conferred by negatively biased implicit processing. Corrective explicit processing may reinterpret a stimulus and override an initial negative implicit response, but depression may arise if explicit correction does not occur. Supporting this view, considerable evidence indicates that depression involves highly reactive negative implicit responses coupled with deficits in cognitive control (Beevers, 2005; Carver, Johnson, & Joormann, 2009; Phillips, Hine, & Thorsteinsson, 2010). For example, a meta-analysis of 202 effect sizes found that negative implicit cognition predicted future depression, and that effect sizes were largest under conditions of sad mood induction and cognitive load—which simultaneously activated negative implicit cognitions and reduced cognitive control (Phillips et al., 2010). Applying the same logic, negatively biased implicit processing may reduce life satisfaction if explicit processing cannot effectively override its effects. Curbing maladaptive implicit cognitions before they manifest in negative explicit cognitions and emotional disorder therefore represents an important self-regulatory goal.

1.2 Implicit cognitions and subjective well-being

Implicit self-esteem and attentional bias are two implicit cognitions that have attracted considerable research attention. Implicit self-esteem has been defined as an automatic, overlearned, and preconscious association between self-concept and positivity or negativity (Koole et al., 2001) that develops via experiential learning (Greenwald & Banaji, 1995). It is assessed by measures that tap a range of associative processes (Bosson, Swann, & Pennebaker, 2000). For example, the Name Letter Preference Task (NLPT; Nuttin, 1985) utilizes our tendency to evaluate self-related objects more positively than self-unrelated objects. Higher self-evaluations are reflected in greater liking of letters in one’s own name, and people are generally unaware that they possess these evaluations (Greenwald & Banaji, 1995; Koole et al., 2001). Implicit self-esteem has been associated with several positive physical and psychological outcomes (Bosson et al., 2000; Conner & Feldman Barrett, 2005). Of particular relevance to the current study, high implicit self-esteem has been associated with high levels of life satisfaction (Gebauer, Riketta, Broemer, & Maio, 2008; Kerns, Lakey, & Heppner, 2008) and low levels of depressive symptoms (for review, see Phillips et al., 2010).²

Whereas implicit self-esteem essentially reflects memory associations, attentional bias refers to the tendency for a particular stimulus to capture one’s attention more readily than other stimuli. Individuals who report high levels of depressive symptoms tend to exhibit preferential attention to negative stimuli and/or decreased attention to positive stimuli (Joormann & Gotlib, 2007; Peckham, McHugh, & Otto, 2010). In contrast, preferential attention for positive stimuli has been linked to positive mood (Joormann & Gotlib, 2007) and high levels of life satisfaction (Raila, Scholl, & Gruber, 2015; Vittersø, Oelmann, & Wang, 2009). Positive attentional biases may take the form of sustained attention to, or faster engagement with, positive stimuli. For example, studies employing the face-in-the-crowd paradigm (Öhman, Lundqvist, & Esteves, 2001) have found that depressed participants exhibit significantly longer latencies to engage with a happy face in an angry crowd than healthy controls (Suslow, Junghanns, & Arolt, 2001) and participants high in life satisfaction display shorter latencies than less satisfied participants (Vittersø et al., 2009).

1.3 Self-compassion as self-regulator

According to Neff (2003b), self-compassion entails responding to difficult circumstances by treating oneself with self-kindness rather than harsh judgement, recognizing that imperfection is a common human experience that connects us to others rather than isolating us, and being mindfully aware of painful thoughts and feelings rather than overidentifying with them. Doing so allows individuals to embrace and accept personal weaknesses, failures, and challenges by applying adaptive emotional coping skills and motivational orientations (Leary, Tate, Adams, Allen, & Hancock, 2007; Neely, Schallert, Mohammed, Roberts, & Chen, 2009). For example, highly self-compassionate individuals exhibit greater perspective-taking and less isolation when contemplating unpleasant life events, less negative affect when responding to situations involving failure or embarrassment, an ability to make necessary life changes, and motivation to pursue new and attainable goals (Leary et al., 2007; Neely et al., 2009; Neff, Kirkpatrick, & Rude, 2007).

Neff (2003a) conceptualized self-compassion not only as a positive self-attitude but also as a process that requires engaging in metacognitive activity. Such activity involves explicit information processes, such as taking a broader perspective, pausing to consider thoughts and feelings, acknowledging and accepting pain, and engaging in gentle and encouraging inner dialogues (Neff & Dahm, 2015). Accordingly, the self-regulatory function of self-compassion has been examined in relation to several explicit processes. The association between self-compassion and depressive symptoms has been partially explained by infrequent use of maladaptive explicit emotion regulation strategies such as rumination and avoidance (Krieger et al., 2013; Raes, 2010). Self-compassion has also been found to moderate the effects of explicit cognitions on well-being. For example, explicit self-esteem has predicted the future mental health of adolescents with low, but not high, levels of self-compassion (Marshall et al., 2015), and irrationality has been associated with depression only among less self-compassionate individuals (Podina et al., 2015). These protective effects were attributed to the ability of highly self-compassionate individuals to accept, reinterpret, and forgive perceived personal shortcomings.

Nevertheless, there are reasons to expect that self-compassion may also regulate the effects of implicit cognitions on well-being in the manner proposed by dual-process theory. Given that implicit cognitions are automatic associations formed during life experiences, and self-compassion assists us to manage these experiences, self-compassion (as an explicit process) may override negative implicit responses. Indeed, self-compassion has already been found to
influence implicit (physiological) processes by attenuating sympathetic nervous system activation in response to stress (Arch et al., 2014).

1.4 | The current study

We aimed to determine whether the self-regulatory function of self-compassion may extend to implicit processing and hypothesized that self-compassion would moderate the effects of two implicit cognitions (implicit self-esteem and positive attention bias [PAB]) on two indicators of subjective well-being (depressive symptoms and life satisfaction). Specifically, we expected low implicit self-esteem and weak PAB to predict high levels of depressive symptoms for individuals who were low on self-compassion but not for those who were high on self-compassion. Similarly, we expected low implicit self-esteem and weak PAB to predict low levels of life satisfaction only among less self-compassionate individuals.

2 | METHOD

2.1 | Participants

Australian residents were recruited from a Qualtrics™ (2016) panel of individuals aged 18 years and over, who had previously expressed interest in responding to surveys. For taking part, each respondent received AUD14.00. A stringent data cleaning process excluded respondents with excessive missing data (12), “straight-line” responses on the Self-Compassion Scale (SCS; 10), or self-reported prior exposure to at least one implicit task in the survey (9). Familiarity with implicit tasks presents a threat to validity because they rely upon automatic processes that are unconscious, unintentional, and uncontrolled (Moors, Spruyt, & De Houwer, 2010). The final sample comprised 132 participants (58% male) aged between 19 and 85 years (Mdn = 52.00).

2.2 | Measures

2.2.1 | Self-compassion

Levels of self-compassion were measured by the 26-item SCS (Neff, 2003a). Participants indicated agreement with statements describing responses to difficult experiences (e.g., “I’m kind to myself when I’m experiencing suffering”) on a scale from 1 (almost never) to 5 (almost always). Total scores were calculated by averaging all items after reverse scoring negative items. The SCS has previously demonstrated construct validity and test-retest reliability (Neff, 2003a). In the current study, the SCS exhibited high internal consistency (α = .87).

2.2.2 | Life satisfaction

The five-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) assessed participants’ agreement with five evaluative statements (e.g., “in most ways my life is close to ideal”). Response options ranged from 1 (strongly disagree) to 7 (strongly agree). Variable scores were calculated by summing items. The SWLS has previously demonstrated high internal consistency, test-retest reliability, and validity (Diener et al., 1985). Excellent reliability was achieved in the current study (α = .95).

2.2.3 | Depression

Current depressive symptoms were assessed by the seven item depression subscale of the Depression and Anxiety Stress Scales (DASS-D; Lovibond & Lovibond, 1995). Participants rated how often they generally experience each of seven depressive symptoms (e.g., “I felt down-hearted and blue”), from 0 (does not apply to me at all) to 3 (applies to me very much, or most of the time). Variable scores were calculated by summing items. The DASS-D is a reliable measure that has exhibited construct, convergent, and discriminant validity (Crawford & Henry, 2003). The DASS-D demonstrated high internal consistency in the current study (α = .85).

2.2.4 | Implicit self-esteem

The NLPT (Nuttin, 1985) assessed preference for one’s own first name initial (Gebauer et al., 2008), which reflects an automatic self-evaluation that is activated without conscious self-reflection (Koole et al., 2001). All letters of the alphabet were presented individually, in random order, for up to 30 s. Participants were asked “how much do you like this symbol?” and to immediately respond on a scale from 1 (dislike extremely) to 7 (like extremely). A practice session involving three numbers preceded the task. The NLPT has previously exhibited convergent and construct validity (Koole et al., 2001) and test-retest reliability (Bosson et al., 2000). In the current study, variable scores were calculated using the Z-transformed double-correction algorithm (De Raedt, Schacht, Franck, & De Houwer, 2006). We selected this algorithm over other scoring algorithms because it produced a variable that showed superior validity, by correlating more strongly with the criterion variables in our dataset (see Hoorens, 2014). The NLPT also exhibited high internal consistency (α = .88).

2.2.5 | Positive attention bias

Positive attention bias was assessed by a reaction time (RT) measure involving identifying a happy face in a crowd of angry faces (Öhman et al., 2001; Quirin, Bode, & Kuhl, 2011). Participants viewed a series of 30 randomly presented screens depicting nine schematic faces in a 3 x 3 matrix (Öhman et al., 2001). Fifteen matrices contained nine faces with the same expression (happy, angry, or neutral), and 15 contained one different target face amidst eight distractor faces (happy among angry, happy among neutral, and angry among neutral). Each target/distractor combination was presented five times, with the target face appearing in five different matrix positions, and each matrix containing faces with the same expression appeared five times. Three practice matrices and explanatory solutions were presented before the task began. Participants pressed a key as quickly as possible to indicate either “one face is different” or “all faces are the same.” They were randomly assigned to press either F if a discrepant face appeared and J if all faces were the same, or J for a discrepant face and F for all the same. A fixation cross appeared for 1.5 s before each matrix.

Reaction times below 300 ms and above 3000 ms were replaced with the participant’s mean time to respond to other matrices in the same target/distractor category (Quirin et al., 2011) because they were likely to reflect anticipation errors or lapses in concentration, respectively. RTs were deleted when the presence/absence of a discrepant face was erroneously indicated (Koole et al., 2001). Difference scores
were calculated by subtracting RTs to happy among neutral faces from RTs to happy among angry faces for the five homologous positions of the target face (Quirin et al., 2011). A difference score for a target face position was only created for a participant if both RTs in a homologous face pair were present. Variable scores were formed by averaging the difference scores (Koole et al., 2001; Quirin et al., 2011) and were treated as missing values if >40% of the difference scores were missing. Lower values indicate faster detection of happy faces among angry faces and thus greater PAB. This variable’s internal consistency was adequate (α = .64).

### 2.3 Procedure

Data were collected via an online survey administered by Qualtrics™ (2016) who recruited participants by forwarding email invitations to panel members. Demographics questions were presented first, followed by blocks containing (a) the SCS, SWLS, and DASS-D and (b) the NLPT and PAB. The blocks and the measures within them were presented in randomized order by the Qualtrics software.

### 3 RESULTS

#### 3.1 Data cleaning and descriptive statistics

Little’s missing completely at random test indicated that 14 missing values on NLPT and eight on PAB were missing completely at random. χ²(4) = 3.85, p = .43. Consequently, they were imputed by SPSS’s expectation maximization procedure. Four low scoring univariate outliers on PAB were recoded to one point beyond the next lowest score on the distribution (Tabachnick & Fidell, 2001). A logarithmic transformation was applied to the DASS-D variable to improve normality of the regression residuals. All other assumptions of multiple regression were met.

Cut-offs reported by Diener et al. (2009) indicated that 28.0% of participants were highly satisfied with their lives, 34.1% reported average levels of life satisfaction, 14.4% were slightly dissatisfied, and 23.5% reported dissatisfaction. Norms provided by Lovibond and Lovibond (1995) indicated that 58.3% of participants reported normal levels of depression, 13.6% reported levels consistent with mild depression. In both models, age and gender were entered as covariates at the first step, along with both implicit cognition variables and self-compassion centred at their respective mean. Interaction terms between each implicit cognition variable and self-compassion were entered at the second, final, step of each model. The final steps of the two models are presented in Table 2.

The first analysis assessed the prediction of life satisfaction (SWLS) from implicit self-esteem (NLPT), positive attention bias (PAB), self-compassion (SCS), and the interaction terms for the associations between implicit self-esteem and self-compassion (SCS × NLPT) and PAB and self-compassion (SCS × PAB). The predictors explained 36.4% of the variance in SWLS. SCS and NLPT were positively associated with SWLS, and a negative association between PAB and SWLS indicated that highly satisfied participants exhibited a strong PAB. Both interaction terms were also significant predictors, together explaining 8.7% of the variance in the model. Consequently, simple slopes analyses were conducted in Process (Hayes, 2012) to probe the interactions. PAB was negatively associated with SWLS for participants with low levels of SCS (1 SD below the mean), β = -.33, p < .01, but was not associated with SWLS for participants with high SCS (1 SD above the mean), β = .05, p = .95. Similarly, NLPT was positively associated with SWLS at low levels of SCS, β = .51, p < .01, but not at high levels of SCS, β = .08, p = .42.

We then regressed DASS-D onto the same predictors and interaction terms. The model explained 49.6% of the variance in DASS-D. NLPT and SCS were negatively associated with DASS-D, and a positive association with PAB indicated that depressed participants exhibited a weak PAB. The two interaction terms were significant, together explaining 4.7% of the total variance. Simple slopes analysis revealed that PAB was positively associated with DASS-D for participants with low levels of SCS, β = .48, p < .001, but was not associated with DASS-D for participants with high levels of SCS, β = .05, p = .56. Similarly, NLPT was negatively associated with DASS-D at low levels of SCS, β = -.42, p < .001, but not at high levels of SCS, β = -.14, p = .10.

As hypothesized, these results indicate that the predictive effects of implicit cognitions on life satisfaction and depression were only evident among participants who were low on self-compassion. The SCS interactions are depicted in Figure 1.

### Table 1 Correlations, means, and standard deviations

<table>
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<tr>
<th>Variables</th>
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<td>2. Gender</td>
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<td>3. DASS-D</td>
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<td>4. SWLS</td>
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<td>-.09</td>
<td>-.54**</td>
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<td>5. NLPT</td>
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<td>.18*</td>
<td>-.24**</td>
<td>.26**</td>
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<td>6. PAB</td>
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<td>-.03</td>
<td>.16</td>
<td>-.15</td>
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<td>7. SCS</td>
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<td>-.21*</td>
<td>-.56**</td>
<td>.41**</td>
<td>.05</td>
<td>.12</td>
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<td>SD</td>
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DASS-D = depression; SWLS = life satisfaction; NLPT = implicit self-esteem; PAB = positive attention bias (where low scores represent greater positivity); SCS = self-compassion.

*p < .01.

'p < .05.
Despite a plethora of research on self-compassion in recent years, examination of its self-regulatory function has been limited to explicit cognitions. This study examined whether self-compassion may also regulate the effects of implicit cognitions on subjective well-being. As hypothesized, self-compassion scores moderated the effects of implicit self-esteem and PAB on life satisfaction and depressive symptoms in our sample. The interactions indicated that low implicit self-esteem and weak position attention bias predicted high levels of depressive symptoms and low life satisfaction for participants who scored low on self-compassion whereas highly self-compassionate individuals reported high life satisfaction and few depressive symptoms irrespective of the valence of their implicit cognitions. This pattern of results is consistent with the perspective that high self-compassion mitigates the effects of negative implicit cognitions on well-being.

The identification of self-compassion as a moderator of the relationship between implicit cognition and subjective well-being extends previous research findings indicating that self-compassion buffers the effects of explicit cognitions on well-being, including explicit self-esteem on future mental health (Marshall et al., 2015) and irrational beliefs on depressive symptoms (Podina et al., 2015). The current results suggest that self-compassion not only involves metacognitive activity but may also override automatic preconscious responses in a manner proposed by dual-process theorists (Beevers, 2005; Evans, 2008). Such a function is consistent with definitions of implicit cognitions as associations formed during past life experiences (Greenwald & Banaji, 1995; Koole et al., 2001), and with self-compassion as an explicit process that assists individuals to accept, manage, and move past negative life experiences (Leary et al., 2007; Neely et al., 2009; Neff, 2003a; Neff, Hsieh, & Dejitterat, 2005).

One particularly relevant feature of self-compassion is that it does not involve discarding or replacing negative emotions or memories but...
instead involves embracing them (Neff & Dahm, 2015). Indeed, highly self-compassionate individuals are less likely to suppress unwanted thoughts and emotions than those low in self-compassion (Neff, 2003a), and to acknowledge the validity and importance of their emotions (Leary et al., 2007; Neff et al., 2005; Neff et al., 2007). For example, Shapira and Mongrain (2010) found that participants who wrote themselves a self-compassionate letter about distressing events for 1 week reported more happiness 6 months later than control participants who simply wrote about memories. As Neff and Dahm (2015) describe it, “By wrapping one’s pain in the warm embrace of self-compassion, positive feelings are generated that help balance the negative ones, allowing for more joyous states of mind” (p. 124). Thus, it is possible for negative implicit cognitions to remain in situ in a latent form, without impacting well-being.

4.1 | Theoretical considerations

In line with dual-process theory (Evans, 2008) and perspectives on self-regulation (Baumeister & Vohs, 2004), our findings are consistent with the notion that self-compassion is an explicit process that overrides an immediate response that is inconsistent with one’s goals. However, overriding implicit responses requires cognitive resources that can become depleted under stress or cognitive load. For example, experimental depletion of the cognitive resources of depression-vulnerable individuals has revealed otherwise latent negative cognitive biases (e.g., Wenzlaff & Bates, 1998). Similarly, neurophysiological evidence suggests that depression may occur when regulatory functions of top-down (explicit) processing are undermined and maladaptive bottom-up (implicit) processing is exposed (Carver et al., 2009). It will be of theoretical and practical value for future researchers to investigate whether self-compassion’s ability to moderate negative implicit cognitions may be impaired by cognitive load or life stress. If self-compassion is relatively immune to the impact of stress, then strategies to boost self-compassion (Gilbert, 2009b; Neff & Germer, 2013) may be particularly helpful for individuals who harbour negative implicit associations that place them at risk for emotional disorder or discomfort.

The possibility that self-compassion is resistant to stress is supported by increasing research evidence. For example, self-compassion has been associated with low levels of physiological stress responses (Breines et al., 2014; Breines et al., 2015), and self-compassion training has reduced sympathetic nervous system reactivity and increased adaptive parasympathetic activity in response to a stress test (Arch et al., 2014). These findings support Gilbert’s (2009a) perspective, which proposes that self-compassion influences well-being by activating the social-safeness neurological system (associated with self-soothing and oxytocin-opiate release) and deactivate the threat-defence system (associated with self-criticism and sympathetic arousal). Svendsen et al. (2016) suggested that self-compassion’s ability to soothe the limbic system may liberate prefrontal resources, which increases the capacity for effortful and conscious self-regulation. Additionally, it is possible that overriding negative implicit responses may become less effortful over time for highly self-compassionate individuals, given that the ease and automaticity of self-compassionate responses reportedly increase with practice (Gale, Schröder, & Gilbert, 2017). Indeed, repeated practice is one proposed dual-process mechanism by which explicit processes become implicit over time (Evans, 2008).

4.2 | Practical implications

Our results indicate that self-compassion may represent a protective factor for individuals who harbour negative implicit cognitions. This is an important finding because evidence suggests that negative implicit cognitions may represent vulnerability factors for future depression (Phillips et al., 2010). For example, Phillips, Hine, and Bhullar (2012) found that a set of implicit cognitions predicted the future depression status of undergraduates more strongly than a set of conceptually similar explicit cognitions, and that this effect was driven by implicit self-esteem. Similarly, negative attention biases have been associated with the persistence of sad mood (Clasen, Wells, Ellis, & Beevers, 2013), and attentional bias modification studies have shown that biases can causally influence emotion regulation in clinical and nonclinical populations (MacLeod & Grafton, 2014). It should also be noted that implicit and explicit cognitions are believed to be distinct constructs (Nosek, 2005), which consequently explain unique variance in well-being outcomes. For instance, implicit self-esteem has explained variance over and above explicit self-esteem in the prediction of physical health (Shimizu & Pelham, 2004) and self-reported levels of daily negative affect (Conner & Feldman Barrett, 2005). The possibility that self-compassion may regulate the effects of both negative explicit and implicit cognitions endows it with considerable prophylactic utility.

Training programs that teach people how to increase their levels of self-compassion have demonstrated a wide range of physiological (Arch et al., 2014; Desbordes et al., 2012), psychological (Neff & Germer, 2013; Shapira & Mongrain, 2010; Smeets, Neff, Alberts, & Peters, 2014), and therapeutic benefits (Braehler et al., 2013; Hofmann, Grossman, & Hinton, 2011). Arguably the two most prominent self-compassion training programs are compassion-focused therapy (Gilbert, 2009b) and mindful self-compassion (Neff & Germer, 2013). Both programs teach participants how to provide themselves with encouragement and support rather than punishment and condemnation when facing difficult circumstances and include exercises in which self-compassion is applied to real-life struggles. Mindful self-compassion is directed toward the general population (and some clinical groups), whereas compassion-focused therapy is directed toward clinical populations. The current results suggest that self-compassion training may also be an effective strategy for vulnerable populations. For example, it may assist individuals who are currently euthymic but at risk of future depression due to prior depression or family history, to the extent that these individuals tend to exhibit low implicit self-esteem and a weak PAB.

4.3 | Limitations and future research

Several limitations of this study should be considered when interpreting its results. First, although we employed a community sample with similar gender representation, our findings may not necessarily generalize to the Australian population or to other populations. It will be important to determine if the same moderating influence is
observed in other populations, particularly in clinically depressed samples or among euthymic individuals who are likely to possess negative implicit cognitions (e.g., those who have previously experienced depression or trauma) and be at risk for future aversive outcomes. Second, this study employed a correlational research design, so the presence of significant associations cannot be taken as evidence of the existence of causal relationships and cannot inform us about the direction(s) of these relationships. Third, the use of an online data collection platform meant that we could not control aspects of participants' environments that may have influenced their ability to attend to the survey. To address this potential issue, we screened for anomalous responses by recording the time that participants spent on each implicit task and the whole survey. Nevertheless, it is possible that the reliability of tasks, especially the attention bias task, may have been higher in a controlled experimental setting.

Finally, in line with dual-process theory, our results are consistent with the view that self-compassion is an explicit cognitive process that may override negative implicit cognitions to protect vulnerable individuals from unpleasant subjective well-being outcomes. The current results are also consistent with the suggestion of Svendsen et al. (2016) that self-compassion's soothing effects on the limbic system may increase the availability of cognitive resources that facilitate effortful self-regulation. However, our study examined only two implicit cognitions and two indicators of subjective well-being. The same pattern of results may not extend to other implicit cognitions or forms of well-being. It will be of interest for future researchers to determine whether self-compassion also moderates the effects of other implicit cognitions on different indicators of well-being and behaviour, such as the effects of a negative attention bias (e.g., speed to identify an angry face) on anxiety, or of implicit attitudes on addictive or dysfunctional behaviour. As previously suggested, future research may also fruitfully investigate whether self-compassion training is particularly beneficial to individuals who possess negative implicit cognitions, and whether the moderating effects of self-compassion are robust under conditions of stress or cognitive load.

ENDNOTES

1 The processes have been given various labels, including Reflective and Intuitive (Evans, 2010), Rational and Experiential (Epstein, 2003), and System 1 and System 2 (Stanovich & West, 2003).

2 Some studies have found a positive association between implicit self-esteem and depression (Franck, De Raedt, & De Houwer, 2007) and that implicit self-esteem increases in response to threat (Brown, 2010). However, overall the literature indicates a mean negative relationship between implicit self-esteem and depression (Phillips et al., 2010), which we propose may reflect individuals' implicit self-esteem set points.

REFERENCES


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